

Exhibit 3
(Excerpt)
(Redacted)

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA**

**UNITED STATES OF AMERICA, ET AL.,
Plaintiffs,**

v.

**GOOGLE LLC,
Defendant.**

Case No. 1:23-cv-00108 (LMB/JFA)

EXPERT REPORT OF MARK A. ISRAEL

January 23, 2024

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- Connected TV display advertising—which Plaintiffs’ markets exclude—grew from essentially zero percent of U.S. display ad spending in 2013 to 15 percent in 2022.
- Direct sales of display advertising between advertisers and publishers (including programmatic direct options)—which Plaintiffs’ markets exclude—accounted for at least 70 percent of U.S. display ad spending throughout the entire 2013 to 2022 period.⁷

48. *Plaintiffs’ proposed relevant product markets violate core principles of market definition and thus are overly narrow in the sense that they leave out critical competitive constraints (and thus fail at the most important purpose of market definition) (Section IV):* The primary purpose of market definition is to identify the most important competitive constraints faced by the firm and products in question, and thus to provide the proper setting in which to assess the extent to which the firm in question has market or monopoly power in the face of those constraints. Plaintiffs define overly narrow product markets—omitting key competitive constraints—which violate core principles of market definition and thus cannot provide a sound basis on which to assess market power.

- *Markets should include all significant competitive constraints:* The relevant market(s) should be defined to include all close competitors to the firm (and its relevant products) whose conduct is at issue. Close competitors are those competitors that impose significant competitive constraints on the product(s) at issue—meaning the competitors that would, directly or indirectly, take significant revenue from the firm if it were to raise its prices or lower the quality of its offerings. A market definition that excludes

⁷ In contrast, indirect sales of display advertising between advertisers and publishers remained relatively constant over the relevant time period, accounting for 21 percent of U.S. display ad spending in 2013 and 23 percent in 2022.

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significant competitive constraints will naturally (but mistakenly) find a lack of competition in the narrowly defined market, and naturally (but mistakenly) find the presence of significant market or even monopoly power.

For example, as explained in greater detail below, markets limited to “open web display advertising” miss the most active areas of competition in digital advertising and ad tech, and thus do not capture the most significant competitive constraints on Google. Hence, such an artificially narrow market definition does not provide a sound basis for assessing the extent to which Google’s ad tech products possess market power or for assessing the effects of Google’s challenged conduct. Understanding the competition that exists between open web display advertising and other forms of display advertising (including but not limited to the strong competition that comes from so-called “walled gardens” such as Meta and Amazon) is critical to evaluating both the extent of Google’s market power and the effects of the challenged conduct. *As one simple implication for the present case, a market definition that defines Meta and Amazon out of the market is not useful for drawing insights about the actual competition that Google faces.*

- *Application of principles of market definition to two-sided markets with indirect network effects:* A particular complication arises in this case because the ad tech industry is characterized by indirect network effects. One consequence of indirect network effects is that actions on one side of the market necessarily affect outcomes on the other side of the market; for example, actions that reduce the amount of advertising inventory offered by publishers will reduce the number of bids for digital ads and vice versa. Likewise, actions that create new digital properties where users see digital ads—for example, the

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creation of a new social media platform—will affect the number and amount of bids for digital ads sold on pre-existing digital properties.

This fact implies that ad tech intermediaries are competitively constrained by the options that *both* publishers and advertisers have, regardless of whether the intermediary is publisher-facing or advertiser-facing or both. This follows because one of the constraints on any action that would harm one side of the market (e.g., higher prices) is that—due to feedback effects—it would also cost sales on the other side of the market. When ad tech intermediaries extract more of the surplus created by matches between advertisers and impressions created when users visit publishers’ digital properties, that makes ad tech less attractive (for publishers, advertisers, or both), which reduces the total quantity of digital advertising transacted via ad tech. As the quantity transacted falls, so do the revenues of ad tech intermediaries on both sides of the market, because intermediaries earn money when they facilitate transactions. Because every sale by a publisher is a purchase by an advertiser, a purely one-sided focus is necessarily incomplete:

Substitution away from ad tech on either side costs all intermediaries business. Due to the feedback effects and constraints on both sides of the market—and contrary to Prof. Lee’s analysis—the indirect network effects that characterize two-sided markets imply that analysis of relevant antitrust markets requires consideration of *all* the dimensions of substitution on both sides of the platform, not just constraints on one side.

- *Plaintiffs’ “advertiser ad network” market is overly narrow:* Plaintiffs allege that “advertiser ad networks” for open web display advertising constitute a relevant product market. However, this narrow market definition excludes important competitive alternatives that advertisers can make use of.

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Even within the scope of open web display advertising, advertisers can access the same inventory using other types of buying tools such as demand-side platforms (DSPs) and/or buying directly from publishers, options that are excluded from Plaintiffs’ narrow “advertiser ad network” market. In addition, advertisers can substitute to forms of advertising that Plaintiffs exclude from their alleged relevant market, including advertising on social media properties and in-app advertising. For example, if an advertiser is not successfully reaching its target audience when it utilizes Google Ads, it may shift ad spend to Meta Ads Manager in the hopes that it can reach its target audience on Facebook or Instagram. Given the wide range of options to which advertisers can and do switch (as demonstrated by Prof. Simonson’s survey and other empirical evidence)—and the associated ad tech that facilitates those transactions—Plaintiffs’ market definition is untenable.

Including other open web display advertiser buying tools such as DSPs reduces Google’s share in a candidate advertiser buying tool market to no higher than around 50 percent, without even considering other omitted competitive constraints like social media advertising. Further including direct purchases in that market (but continuing to omit other important competitive constraints like social media advertising), Google’s share is around 40 percent based on impressions and less than 30 percent based on ad spending. Considering all buying tools for display advertising (i.e., including social media and all other forms of display advertising), Google’s share is less than 20 percent.

- *Plaintiffs’ ad exchange market is overly narrow:* Plaintiffs allege that “ad exchanges for indirect open web display advertising” constitute a relevant product market. However, publishers and advertisers have important options to substitute away from indirect sales

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transacted through ad exchanges—meaning important paths to connect advertisers and publishers without relying on indirect sales—that Plaintiffs’ market omits. Publishers and advertisers can and do disintermediate ad exchanges with direct sales. As one demonstration of the importance of this substitution between direct and indirect channels, a core purpose of a publisher’s ad server is to allocate sales of impressions between direct and indirect buyers (via functionality such as Enhanced Dynamic Allocation). Similarly, the deprecation of third-party cookies has caused a shift to direct purchases (which enable the use of first-party cookies rather than third-party cookies).

In addition, the same alternatives to “open web display advertising” that exist for publishers and advertisers with respect to publisher ad servers and advertiser buying tools also exert competitive pressure on ad exchanges. For example, advertiser substitution away from open web content (e.g., toward walled gardens like Meta or Amazon) or publishers doing the same (e.g., toward apps) is explicitly a shift from an open web-based exchange to an exchange-equivalent elsewhere, which directly reduces open web exchange revenue.⁸ All of these options—along with the large number of ad exchanges for indirect open web display advertising (that is, the extensive competition even within Plaintiffs’ alleged market)—constrain Google’s behavior in providing ad exchange services. Put simply, there are many paths to connect advertisers and publishers that do not depend on Google’s ad exchange.

⁸ Throughout this report, I use the term “open web” for expositional convenience. However, for the reasons explained in Section IV, this terminology does *not* delineate relevant antitrust product markets.

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Google's share in a candidate ad exchange market is less than 45 percent *even taking Plaintiffs' market as given*. Including direct sales in that market (to say nothing of other omitted competitive constraints like social media advertising), Google's share is less than 40 percent based on impressions and less than 30 percent based on ad spending. Considering all display advertising spending, less than 20 percent uses Google's ad exchange tools.

- *Plaintiffs' publisher ad server market is overly narrow*: Plaintiffs allege that publisher ad servers for open web display advertising constitute a relevant product market. In fact, publishers have important options for their content, their ad formats, and their ad tech tools, all of which enable them to substitute away from Google's ad server, and all of which Plaintiffs' market omits, including (i) shifting more of their content (and associated monetization) to apps, something that is a strategic focus of many publishers; and (ii) self-supply of ad server technology (which is particularly attractive to the largest publishers that account for the vast majority of activity on Google's ad server). Both of these alternatives would cause a loss of sales for Google's open web-focused ad server and thus competitively constrain Google. Indeed, most competitive focus in recent years is on mobile and apps in particular, yet Plaintiffs define this competitive activity out of their analysis by excluding the ad server analogue for in-app ads from the market.

Expanding Plaintiffs' publisher ad server market to include in-house ad servers (such as those used by Meta for advertising on its own properties), Google's current share is less than 40 percent. Moreover, among the in-app mediation platforms (the in-app analogue of a publisher ad server) serving the rapidly growing segment of in-app display advertising, Google's share is also less than 40 percent. Considering all display

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advertising spending, only approximately 30 percent currently uses Google’s publisher ad server tools.

- *Plaintiffs’ proposed markets are inconsistent with commercial realities:* The pricing patterns observed in the data, both over time and across ad tech components, refute Plaintiffs’ proposed markets and demonstrate that Plaintiffs are alleging an actual monopolist that does not raise prices. Instead, these patterns show that reliance on component-specific markets at different levels of the ad tech stack does not provide a sound economic framework with which to assess Google’s alleged market power or its challenged conduct.

Regarding variation in prices and concentration over time, exits by publisher ad servers create an opportunity to test Plaintiffs’ candidate markets. If component-specific markets at different levels of the ad tech stack are valid antitrust markets, exits due to Google’s alleged anticompetitive conduct should result in higher prices and lower output. But that is not what is observed in the data, which show DFP’s prices *declining* and overall output *increasing* over time, even as ad server exits have occurred. Moreover, Plaintiffs have not demonstrated that prices would have declined even more absent the challenged conduct.

Similarly, despite the alleged increases in AdX’s share of open web ad exchanges—from almost nothing in 2008 to an alleged “more than 50%” today (though in fact its true share is lower as I explained above)—and despite Plaintiffs’ claim that Google has monopolized ad exchanges over this time period, AdX’s average fee has stayed essentially constant. Thus, Plaintiffs’ proposed component-specific product markets are inconsistent with economic realities and do not provide a useful economic framework for

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assessing market power or competitive effects. Instead, competitive constraints beyond Plaintiffs' alleged markets must be constraining the observed pricing patterns. Because these competitive constraints are omitted from Plaintiffs' product market definitions, those definitions are neither valid nor informative about the extent to which Google possesses market power.

Regarding variation in prices and concentration levels across ad tech components, if Plaintiffs' three *separate* proposed markets were valid—such that shares within those markets were credible indicators of market power—Google should be able to take its biggest cut of ad spending in the market where its share is the highest. Instead, Google's fees are lowest where its alleged component-specific share is highest (publisher ad serving). As with the variation in prices over time, this fact demonstrates that Plaintiffs' proposed component-specific product markets are not valid, as they do not provide a sound economic framework for assessing market power or competitive effects. Rather, consideration of the full two-sided market is required to understand the pricing structure across that market.

Finally, Plaintiffs' proposed component-specific markets are inconsistent with increasing integration by ad tech providers and their products, which means firms are competing by offering products that cross over more than one of Plaintiffs' narrow markets and that, in some cases, skip over Plaintiffs' proposed markets entirely. For example, direct integrations between advertiser buying tools and publishers compete with ad exchanges and provide an alternative way to connect advertisers and publishers with no need for an exchange. Similarly, direct integrations between ad exchanges and advertisers compete with advertiser buying tools. Plaintiffs' component-level markets ignore these direct

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integrations—which shatter the artificial boundaries between their component-specific markets—and thus fail to properly account for their competitive implications.

- *A single two-sided market definition properly captures the competitive realities of the ad tech industry and the competition that Google faces:* A two-sided market definition that considers the various ad tech components as a single platform that matches advertisers and publishers provides the proper and most informative economic framework in which to understand Google’s behavior and the competitive environment in which it operates. Specifically, such a two-sided market: (i) includes relevant competitive constraints from both sides of the market; (ii) makes sense of Google’s pricing patterns; (iii) explains why Google focuses on the competitive pressures imposed by walled gardens, which themselves offer an integrated solution to connect advertisers to publishers; and (iv) allows for the fact that firms may compete by offering various combinations of products from Plaintiffs’ artificially narrow component-specific markets as a single product.

Regarding Google’s pricing patterns, firms in two-sided markets have an incentive to set a pricing structure across both sides of the market that takes into account competitive conditions on both sides of the market. It is not uncommon to see low (or even negative) prices on one side of the market (e.g., the customer-facing side of credit card markets) even if that side of the market, on its own, would appear to have greater market concentration. Such patterns—which are inconsistent with the use of separate component-specific markets—can only be understood by properly considering the full two-sided market. Here, the observed ad tech pricing patterns (such as low prices for publisher ad servers) can best be explained by the fact that Google has strong incentives to set its own prices (and develop other product features) in such a way as to recognize

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competitive constraints from both sides of the market, and to balance the interests of advertisers, publishers, and users.

Regarding competition with walled gardens (which Prof. Lee refers to as digital properties “using integrated advertising tools”), in two-sided markets, there is often vigorous competition between open and closed platforms. In the present context, Meta and Amazon operate owned-and-operated advertising platforms that are much more closed than Google’s, and yet the evidence that I discuss below indicates significant substitution between open web display advertising and advertising on walled gardens.

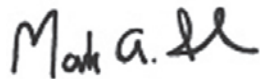
Google’s share within a single two-sided transaction market for display advertising (as opposed to Plaintiffs’ component-specific open web display advertising markets) is less than 30 percent and declining, and has been less than 50 percent over the entire 2008-2022 period. Within a single two-sided transaction market for all digital advertising (including search advertising), Google’s share is less than 40 percent and declining, and has been less than 50 percent over the entire 2008-2022 period.

49. Because competitive conditions vary across countries—driven by differences in incomes, language, the regulatory environment, and other factors—it is most appropriate to assess competition and the effects of Google’s challenged conduct in a geographic market limited to the United States. Analysis based on worldwide data, which inaccurately blends the different competitive conditions in other countries with those in the United States, obscures the nature of competition that exists in the United States.

50. *Google does not have monopoly power in any properly-defined relevant market (Section I):* For Google to have monopoly power as a matter of economics, it must be the case that Google has the ability to profit by restricting market-wide output, without that output being

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840. Second, even if, counterfactually, Google’s conduct did lead to higher advertising prices, advertising costs do not generally translate into higher prices for the advertised products. For example, in standard price-setting models, the cost of advertising does not appear in the firm’s first-order conditions because it does not vary with output.¹³²¹ In this scenario, an increase in the cost of advertising may cause the firm to reduce its use of advertising, but would not change the price of the product(s) it is selling. Prof. Lee’s caution in stating only that retail prices *can* be higher (even under the mistaken premise that advertising costs are higher) is thus warranted.¹³²² Prof. Lee presents no economic model or empirical analysis to demonstrate that higher advertising costs, *even if they were to occur*, would be passed on to consumers or to what degree.



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January 23, 2024

¹³²¹ Hal Varian (2022), “Advertising Costs and Product Prices,” *Journal of Law and Economics*, 65(6): S419-S431. See also *Lee Report*, ¶ 842 (“The extent to which they do so depends on the nature of competition and the characteristics of costs and demand for the product.” (citing Jeremy I. Bulow and Paul Pfleiderer (1983), “A Note on the Effect of Cost Changes on Prices,” *Journal of Political Economy*, 91(1): 182-185; and E. Glen Weyl and Michal Fabinger (2013), “Pass-Through as an Economic Tool: Principles of Incidence under Imperfect Competition,” *Journal of Political Economy*, 121(3): 528-583)).

¹³²² *Lee Report*, § VIII.B.2 (“Higher fees charged for open-web display advertising *can* lead to higher retail prices.” (emphasis added)).